

Explosion proof Sheathed thermocouple and resistance temperature detector

Model : R940 series (ETR series)

Spec. sheet no. **RS09-04**

Service intended

Measuring the temperature in the area where combustible gas, particles and flammable liquid exist can be a very dangerous task. The electrical energy of measuring instrument is lower than electric motor, however, the malfunction of the instrument or the accident can cause to start the explosion. Therefore, ETR series is explosion proof type product which is designed to be used in a critical danger Zone 1 by acquiring IECEx and ATEX certification.



Examination certificate

ATEX II 2G Ex d IIC T6 Gb
IECEX Ex d IIC T6 Gb



Standard features

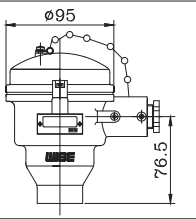
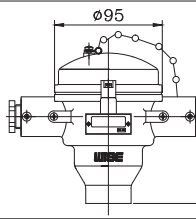
Element

Thermocouple : K, E, J, T, N
RTD : Pt 100Ω at 0°C

Head material

ALDC (Standard)
316SS

Head type

Explosion Proof Type	Explosion Proof Type Double Conduit
	
ATEX II 2G Ex d IIC T6 Gb IECEX Ex d IIC T6 Gb	ATEX II 2G Ex d IIC T6 Gb IECEX Ex d IIC T6 Gb

Tolerances on temperature reading

■ Thermocouple
Class 1, Class 2 (DIN/IEC584-2, BS/EN60584-2, JIS C1602)
Special, Standard (ASTM E230, E988, ISA-MC96.1)

■ R.T.D.
Class A : $\pm (0.15 + 0.002 |t|)$
Class B : $\pm (0.3 + 0.005 |t|)$

Sheath outer diameter

■ Thermocouple
1.0, 1.6, 2.3, 3.2, 4.8, 6.4, 8.0, 9.5 and 12.7 mm
* Double element is not available for 1.0 and 1.6 mm sheath outer diameter

■ RTD
3.2, 4.8, 6.4 and 8.0 mm

■ Ambient temperature
-40 ~ +65°C

1. Base model

- R941** Single element
R942 Double (Duplex) element
R943 Single element with spring load type
R944 Double (Duplex) element with spring load type

2. Head and tip shape type

- A** Explosion proof and ungrounded
B Explosion proof and grounded
C Explosion proof (Double conduit) and ungrounded
D Explosion proof (Double conduit) and grounded
E Explosion proof (316SS) and ungrounded
F Explosion proof (316SS) and grounded

3. Element

- K** K (0.75)
J J (0.75)
T T (0.75)
E E (0.5)
N N (0.75)
Q Pt 100Ω (B)
U JPt 100Ω (B)
1 K (0.4)
2 J (0.4)
3 T (0.4)
4 E (0.4)
5 N (0.4)
9 Pt 100Ω (A)
0 JPt 100Ω (A)
Z Other

4. Sheath material (RTD. is only 316SS and 316L SS)

- 1** 316SS
2 Inconel 600
3 310SS
4 446SS
5 347SS
6 321SS
7 316L SS
9 Other

5. Sheath outer diameter (mm)

- A9** 1.0 (Thermocouple only)
B9 1.6 (Thermocouple only)
C9 2.3 (Thermocouple only)
D9 3.2
E9 4.8
F9 6.4
G9 8.0
H9 9.5 (Thermocouple only)
L9 12.7 (Thermocouple only)

6. Conduit connection

- 1** ½" PF
2 ½" PT
3 ½" NPT
4 ¾" PF
5 ¾" PT
6 ¾" NPT
9 Other

7. Mounting type

- X** Refer to mounting table (11th character)

8. Connection type

- XX** Refer to mounting table (12th and 13th character)

9. Insert length

- X** Refer to insert length table (14th character)

10. Option

- 0** None
1 Accessories
2 ATEX certificate
3 IECEx certificate
4 Accessories and ATEX certificate
5 Accessories and IECEx certificate

1	2	3	4	5	6	7	8	9	10
R941	A	K	1	F9	1	X	XX	X	0

Sample
ordering code

Mounting, connection type and insert length table - 11th thru 14th characters

11 th character		12 th character		13 th character		14 th character	
Code	Mounting	Code	Connection size and connector material	Code	Connection type	Code	Insert length (mm)
A	None	A	None	A	None	A	100 mm
	Fixed thread lag length						
B	80 mm	B	1/8" and 304SS	B	PT	B	200 mm
C	100 mm	C	1/4" and 304SS	C	NPT	C	300 mm
D	150 mm	D	3/8" and 304SS	D	PF	D	400 mm
E	200 mm	E	1/2" and 304SS	E	NPS	E	500 mm
F	Other	F	3/4" and 304SS	F	UNF	F	600 mm
	Fixed flange lag length						
G	80 mm	G	1" and 304SS	G	BSPT	G	700 mm
H	100 mm	H	1 1/4" and 304SS	H	BSPF	H	800 mm
J	150 mm	J	1 1/2" and 304SS	J	MM	J	900 mm
	Fixed flange lag length						
K	200 mm	K	2" and 304SS	K	ANSI 150 Lb RF	K	1,000 mm
L	Other	L	3" and 304SS	L	ANSI 150 Lb FF	L	1,500 mm
M	Movable thread	M	7/16" and 304SS	M	ANSI 300 Lb RF	M	2,000 mm
N	Movable flange	N	1/8" and 316SS	N	ANSI 300 Lb FF	N	2,500 mm
P	Compression fitting	P	1/4" and 316SS	O	Sanitary	P	3,000 mm
	Union and nipple length			P	ANSI 600 Lb RF		
Q	100 mm length	Q	3/8" and 316SS	Q	ANSI 600 Lb FF	Q	3,500 mm
R	150 mm length	R	1/2" and 316SS	R	JIS 5K RF	R	4,000 mm
S	Other	S	3/4" and 316SS	S	JIS 5K FF	S	4,500 mm
	Nipple length						
T	50 mm	T	1" and 316SS	T	JIS 10K RF	T	5,000 mm
U	100 mm	U	1 1/4" and 316SS	U	JIS 10K FF	U	6,000 mm
V	150 mm	V	1 1/2" and 316SS	V	JIS 20K RF	V	7,000 mm
W	Other	W	2" and 316SS	W	JIS 20K FF	W	8,000 mm
X	Fixed thread	X	3" and 316SS	X	ANSI 1,500 Lb RTJ	X	9,000 mm
		Y	7/16" and 316SS	Y	ANSI 2,500 Lb RTJ	Y	10,000 mm
Z	Other	Z	Other	Z	Other	Z	Other

Note for 14th character, please choose a code of next higher length if applicable length is not. Actual length shall be specified.

A large, empty rectangular box with a thin black border, intended for writing a memo.